

## **ABSTRACT**

Disclosed is a method of forming a floating gate in a data flash memory device on which first and second polysilicon films are stacked. After the first polysilicon film is formed, a  $\text{SiH}_4$  gas is introduced to decompose  $\text{SiH}_4$  and  $\text{SiO}_2$  into Si and  $\text{H}_2$  and Si and  $\text{O}_2$ . A  $\text{N}_2$  anneal process is then implemented so that the decomposed  $\text{H}_2$  gas and  $\text{O}_2$  gas react to a  $\text{N}_2$  gas and are then outgassed. Next, a  $\text{SiH}_4$  gas and a  $\text{PH}_3$  gas are introduced to form the second polysilicon film. A native oxide film within the interface of the first polysilicon film and the second polysilicon film is removed to improve characteristics of the data flash memory device.